Dialog
8/6/03 [illegible]
8/7/03
all, [illegible]

```
Your SELECT statement is:
   s (Kepner-Tregoe()SA) or (Kepner()Tregoe()SA)

          Items   File
          -----   ----
      Examined  50 files
      Examined 100 files
      Examined 150 files
      Examined 200 files
      Examined 250 files
              5   416: Dialog Company Name Finder(TM)_2003/Mar
      Examined 300 files
      Examined 350 files
              2   613: PR Newswire_1999-2003/Aug 07
      Examined 400 files
      Examined 450 files
      Examined 500 files
              3   990: NewsRoom Current_2003/Aug 07
              1   992: NewsRoom 2003/Jan-Mar
              3   993: NewsRoom 2002/
              3   994: NewsRoom 2001
      Examined 550 files
              7   995: NewsRoom 2000

   7 files have one or more items; file list includes 551 files.
```

[illegible]

```
Your SELECT statement is:
   s ethink

           Items   File
           -----   ----
               1    13: BAMP_2003/Jul W3
               3    16: Gale Group PROMT(R)_1990-2003/Aug 05
               6    20: Dialog Global Reporter_1997-2003/Aug 05
               1    47: Gale Group Magazine DB(TM)_1959-2003/Jul 28
               1    75: TGG Management Contents(R)_86-2003/Jul W3
       Examined  50 files
               1   111: TGG Natl.Newspaper Index(SM)_1979-2003/Aug 05
               1   120: U.S. Copyrights_1978-2003/Aug
               4   127: TRADEMARKSCAN(R)-CANADA_2003/Jul 30
       Examined 100 files
               3   148: Gale Group Trade & Industry DB_1976-2003/Aug 05
       Examined 150 files
              35   225: DIALOG(R):Domain Names
               6   226: TRADEMARKSCAN(R)-US FED_OG 030729/AP 030709
               3   227: TRADEMARKSCAN(R)- Community Tmks_2003/Jul W4
               1   249: PIRA Mgt. & Mktg. Abs._1976-2003Aug W1
               1   262: CBCA Fulltext_1982-2003/Aug
       Examined 200 files
       Examined 250 files
              15   416: Dialog Company Name Finder(TM)_2003/Mar
               1   436: Humanities Abs Full Text_1984-2003/Jun
       Examined 300 files
               1   494: St LouisPost-Dispatch_1988-2003/Aug 03
               4   515: Dun`s Elec. Bus. Dir.(TM)_2003/June
               4   516: D & B - Duns Market Identifiers_2003/June
               1   518: D&B-Int.Dun`s Market Identifiers(R)_2003/May
       Examined 350 files
               2   547: Experian Business Credit Profiles_2003/Aug W1
               1   553: Wilson Bus. Abs. FullText_1982-2003/Jun
               2   561: ICC British Co.Dir_2003/Aug 03
               1   608: KR/T Bus.News._1992-2003/Aug 05
               2   609: Bridge World Markets_2000-2001/Oct 01
               2   613: PR Newswire_1999-2003/Aug 05
       Examined 400 files
               2   621: Gale Group New Prod.Annou.(R)_1985-2003/Aug 05
               1   638: Newsday/New York Newsday_1987-2003/Aug 03
               2   649: Gale Group Newswire ASAP(TM)_2003/Aug 05
               1   669: TRADEMARKSCAN(R)-Japan_2003/Jul
       Examined 450 files
               1   727: Canadian Newspapers_1990-2003/Aug 05
       Examined 500 files
               1   748: Asia/Pac Bus. Jrnls_1994-2003/Aug 05
               3   781: ProQuest Newsstand_1998-2003/Aug 05
               7   990: NewsRoom Current_2003/Aug 05
               3   992: NewsRoom 2003/Jan-Mar
              22   993: NewsRoom 2002/
               1   994: NewsRoom 2001
       Examined 550 files
               2   995: NewsRoom 2000

   38 files have one or more items; file list includes 551 files.
```

```
Your SELECT statement is:
   s (PRO-COUNSEL? or PRO()COUNSEL? or
PROCOUNSEL?)()process()counseling()software

           Items   File
           -----   ----
       Examined  50 files
       Examined 100 files
       Examined 150 files
       Examined 200 files
       Examined 250 files
       Examined 300 files
       Examined 350 files
       Examined 400 files
       Examined 450 files
       Examined 500 files
       Examined 550 files

   No files have one or more items; file list includes 551 files.
```

```
Your SELECT statement is:
   s (PRO-COUNSEL? or PRO()COUNSEL? or PROCOUNSEL?) and kepner?

           Items   File
           -----   ----
               1    15: ABI/Inform(R)_1971-2003/Aug 05
       Examined  50 files
       Examined 100 files
       Examined 150 files
       Examined 200 files
       Examined 250 files
       Examined 300 files
       Examined 350 files
       Examined 400 files
       Examined 450 files
       Examined 500 files
       Examined 550 files

   1 file has one or more items; file list includes 551 files.
```

```
Your SELECT statement is:
   s ((benefit or benefits) (5n) (normaliz?) (2n) database? ?)

           Items   File
           -----   ----
               1     1: ERIC_1966-2003/Jul 23
               2     2: INSPEC_1969-2003/Jul W4
               1     6: NTIS_1964-2003/Aug W1
               2     7: Social SciSearch(R)_1972-2003/Jul W4
               1     8: Ei Compendex(R)_1970-2003/Jul W4
               4    15: ABI/Inform(R)_1971-2003/Aug 05
               2    34: SciSearch(R) Cited Ref Sci_1990-2003/Jul W4
               3    47: Gale Group Magazine DB(TM)_1959-2003/Jul 28
       Examined  50 files
               4    88: Gale Group Business A.R.T.S._1976-2003/Jul 29
               1   144: Pascal_1973-2003/Jul W3
       Examined 100 files
               1   148: Gale Group Trade & Industry DB_1976-2003/Aug 05
               2   202: Info. Sci. & Tech. Abs._1966-2003/Jul 31
       Examined 150 files
               2   275: Gale Group Computer DB(TM)_1983-2003/Aug 05
       Examined 200 files
       Examined 250 files
               1   420: UnCover_1988-2001/May 31
               1   438: Library Lit. & Info. Science_1984-2003/Jun
               3   440: Current Contents Search(R)_1990-2003/Aug 05
       Examined 300 files
       Examined 350 files
       Examined 400 files
               1   654: US PAT.FULL._1976-2003/Jul 31
       Examined 450 files
       Examined 500 files
       Examined 550 files

   17 files have one or more items; file list includes 551 files.
```

```
Set      Items   Description
S1          32   ((BENEFIT OR BENEFITS) (5N) (NORMALIZ?) (2N) DATABASE? ?)
S2          31   S1 AND PY<=1997
S3          14   RD (unique items)
File   1:ERIC 1966-2003/Jul 23
         (c) format only 2003 The Dialog Corporation
File   2:INSPEC 1969-2003/Jul W4
         (c) 2003 Institution of Electrical Engineers
File   6:NTIS 1964-2003/Aug W1
         (c) 2003 NTIS, Intl Cpyrght All Rights Res
File   7:Social SciSearch(R) 1972-2003/Jul W4
         (c) 2003 Inst for Sci Info
File   8:Ei Compendex(R) 1970-2003/Jul W4
         (c) 2003 Elsevier Eng.  Info. Inc.
File  15:ABI/Inform(R) 1971-2003/Aug 05
         (c) 2003 ProQuest Info&Learning
File  34:SciSearch(R) Cited Ref Sci 1990-2003/Jul W4
         (c) 2003 Inst for Sci Info
File  47:Gale Group Magazine DB(TM) 1959-2003/Jul 28
         (c) 2003 The Gale group
File  88:Gale Group Business A.R.T.S. 1976-2003/Jul 29
         (c) 2003 The Gale Group
File 144:Pascal 1973-2003/Jul W3
         (c) 2003 INIST/CNRS
File 148:Gale Group Trade & Industry DB 1976-2003/Aug 05
         (c)2003 The Gale Group
File 202:Info. Sci. & Tech. Abs. 1966-2003/Jul 31
         (c) Information Today, Inc
File 275:Gale Group Computer DB(TM) 1983-2003/Aug 05
         (c) 2003 The Gale Group
File 420:UnCover 1988-2001/May 31
         (c) 2001 The UnCover Company
File 438:Library Lit. & Info. Science 1984-2003/Jun
         (c) 2003 The HW Wilson Co
File 440:Current Contents Search(R) 1990-2003/Aug 05
         (c) 2003 Inst for Sci Info
File 654:US PAT.FULL. 1976-2003/Jul 31
         (c) FORMAT ONLY 2003 THE DIALOG CORP.
?
```

2/9/1   (Item 1 from file: 1)
DIALOG(R)File   1:ERIC

00872688 ERIC NO.: EJ496656 CLEARINGHOUSE NO.: IR530110
Justifying *Database* *Normalization*: A Cost/*Benefit* Model.
  Lee, Heeseok
  Information Processing & Management, v31 n1 p59-67 Jan-Feb 1995
  1995 (*19950000)*
ISSN: 0306-4573
LANGUAGE: English
DOCUMENT TYPE: 80 (Journal articles); 142 (Reports--Evaluative)
RECORD TYPE: ABSTRACT
JOURNAL ANNOUNCEMENT: CIJMAY1995

Proposes a cost/benefit model coupled with a decision tree for determining normal forms, which are used in information systems development processes to group data into well-refined structures. The three primary variables that impact the benefits and costs of normalization (reduced anomalies, storage requirements, and transaction response times) are addressed. (19 references) (KRN)

DESCRIPTORS: *Cost Effectiveness; *Database Design; Information Storage;
  *Mathematical Models
IDENTIFIERS: *Decision Trees; Examples; Normalization Decision
?

3/9/3 (Item 2 from file: 2)
DIALOG(R)File 2:INSPEC

02406878 INSPEC Abstract Number: C85016091
Title: The importance of good relations (databases)
Author(s): Percy, T.
Author Affiliation: ADR Inc., Princeton, NJ, USA
Journal: Datamation vol.30, no.21 p.86-92
Publication Date: 15 Dec. 1984 Country of Publication: USA
CODEN: DTMNAT ISSN: 0011-6963
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P)
Abstract: While relational *databases* and *normalization* have been widely discussed, the practical *benefits* these concepts have for businesses have sometimes been overlooked. This article explores these ideas and shows how, with proper application and the correct tools, businesses can benefit as they attempt to model the data relationships that are key to how they function. (0 Refs)
Subfile: C
Descriptors: relational databases
Identifiers: tables; query language; relational databases; normalization; application; tools
Class Codes: C6160D (Relational DBMS)
?

3/3,K/6   (Item 2 from file: 7)
DIALOG(R)File   7:Social SciSearch(R)

02408147   GENUINE ARTICLE#: JQ789   NO. REFERENCES: 56
TITLE: ECONOMIC INCENTIVES FOR DATABASE NORMALIZATION
AUTHOR(S): WESTLAND JC
CORPORATE SOURCE: UNIV SO CALIF,SCH BUSINESS ADM/LOS ANGELES//CA/90089
JOURNAL: INFORMATION PROCESSING & MANAGEMENT, *1992*, V28, N5 (SEP-OCT), P 647-662
LANGUAGE: ENGLISH   DOCUMENT TYPE: ARTICLE
(Abstract Available)

1992
?

3/9/9 (Item 1 from file: 47)
DIALOG(R)File 47:Gale Group Magazine DB(TM)

02814776 SUPPLIER NUMBER: 04500306 (THIS IS THE FULL TEXT)
My data, right or wrong; the quality of data is as important, if not more important, than their quantity.
Percy, Tony
Datamation, v32, p123(4)
June 1, 1986
CODEN: DTMNA LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 3482 LINE COUNT: 00273

TEXT:

MY DATA, RIGHT OR WRONG A posse of dignitaries was being given a tour of a new airplane. It was led up the stairs into the cabin where each person inspected the seating, safety belts, portholes, and even the escape chute machinery. The VIPS were impressed. While by no means experts in aeronautics or navigation, the dignitaries asked to visit the cockpit, where they appreciated the layout of dials and controls that would give the pilots and engineer comprehensive flight information.

The dignitaires were about to leave the plane when one asked, "Could we have a look at the engine?" He was a little disappointed to hear from an undismayed guide, "Oh, we don't have an engine for this model yet. It's only a prototype."

Of course, we all know that in the world of aeronautics a prototype has to have an engine. It has to fly. The prototype will have been designed and constructed from a set of detailed and accurate specifications (the design documentation for a Boeing 747 weighs as much as the aircraft itself). The word prototype has been used as a noun for over 400 years, but only recently has a separate process of prototyping been identified. Previously, the construction of a fully functional model was seen as an inherent part of design, quality control, and testing. If there is a desire for information and software engineering to be considered seriously as disciplines comparable to aeronautical engineering, should they not learn from its precepts and practice?

Above the workshop in McDonnell Douglas's hangars, where the next generation of aircraft is being built, there hangs a sign with the following message: "Perform exactly according to the requirements, or cause the requirements to be officially changed." Perhaps this same sign should be posted in all MIS installations.

We in data processing sometimes forget that the underlying data, and the processes that manipulate them (the engine, as it were), have to be designed and created for the system prototype to fly. The logic of the application has to exist and it has to meet the defined user requirements. Some of the more visible external facets of the system, such as help facilities and dialog management, could lead a user to believe that the prototype of a system is meeting his or her requirements precisely because he or she feels comfortable with it. But we must not confuse the prototype of the outer shell with the prototype of the complete system. What could be more comfortable, though pointless, than sitting in the first-class cabin of a Concorde jet without leaving the ground?

ATTEND TO QUALITY OF DATA

Imprecise application of prototyping is an example of a less-than-disciplined approach to information engineering. Modeling the externals is fine, as is defining dataflows, but we ignore the issue of the essence of data, and the maintenance of data quality, at our peril. For the data to be converted into useful information for accurate operational use and confident decision support, we must pay attention to quality throughout the design and implementation process.

First, the relevant data have to be identified. They must be designed properly so they represent business facts accurately. Next, the processes that will work on those data must be specified precisely and unambiguously. The implementation of those processes must be verifiable and correct so

that information pollution does not occur. Finally, the data presented must be applied wisely.

The boundaries between these different issues are not always clear-cut. Absence of information may mean poor design in the sense that inadequate coding schemes have been devised. An example of this is federal economic statistics. Many writers have observed that the U.S. is turning from an industrial economy into an information economy, and that 70% of those employed now work in the service sector.

Joseph Duncan, director of statistical policy for the Office of Management and Budget from 1974 to 1981, and now corporate economist and statistician with Dun & Bradstreet Corp. (which publishes DATAMATION), last year wrote in an article for the New York Times that the Standard Industrial Classification (SIC) coding system has 140 classifications for manufacturing, but only 66 for services. A recommendation made in 1982 that SIC group number 7392--referring to management, consulting, and public relations services--be divided into six new industry categories was not adopted.

"How is Congress supposed to make informed policy decisions on economic and trade issues when it is...groping in the dark?" Duncan asked his readers. "Without accurate information, decision-making becomes arbitrary."

The phrase "information is a corporate asset" has been repeated so frequently that it is now a cliche. What does it actually mean? First, it means that information needs to be treated like other corporate assets. It must be secured or controlled, like cash. It has to be nurtured and utilized effectively, like personnel. But it also must be correct. If we store valuable data on expensive dp equipment, but are unable to translate those data into useful information, then we are only performing a disservice to the owners of that asset.

There is another sense in which data can be defined as an asset. The data a company owns differentiates it from its competitors. What uniquely defines data entities, what information can be determined by individual occurrences of those entities, and what rules are associated with attributes and relationships, are largely waht makes an enterprise unique and what drives its idiosyncratic success. Is it not critical, therefore, that we encourage effective custodianship of this asset, and be very much on the alert if the asset should start to proliferate uncontrollably, and no longer represent the business facts and rules?

Nowhere is this more apparent than when the fundamental business of a company is selling information. Last June, after a Supreme Court ruling, Dun & Bradstreet had to pay $350,000 to a small Vermont construction company that had won a libel suit. Dun & Bradstreet had sent out a credit report that incorrectly described the builder as bankrupt. A part-time student worker had entered the erroneous data into D&B's system after mistaking the small company's identity. The Supreme Court ruling is seen as a landmark because it implies that negligence on the part of the party selling information does not have to be shown, merely that the information being sold was wrong. The lesson should be a salutary one, not just for those organizations whose business is selling information.

The problem for almost all companies is that the rules behind their data exist in the most opaque form. If one takes a simple table of information (in terms of the relational model) used to manage stock information in a manufacturing organization, one might be able to derive a host of business rules from the values and dependencies that exist in the table. The rules might include the number of items the company can manage and the methods for cost accounting across different warehouses. But two constricting conditions exist. First, the table is really only an instantiation of some rules, probably uncodified, that exist in various employees' minds. Businesses tend not to have official rules committees.

Second, the implementation of such rules that have been defined is spattered around a number of uncongenially complex application programs. It is probable that the original, written specifications for the system in question did an imperfect job of defining the business rules that contributed to its implementation, and even more probable that they have

not been updated to reflect necessary changes to the business.

That is why some of the latest methodological approaches to system implementation are putting a great deal of emphasis on a systematic approach to so- called entity analysis and on a disciplined method of codifying business rules. This is one of the big promises of so-called fifth generation systems--a more rigorous way of defining the essence behind an enterprise by expet-system techniques and rule-based systems. The relational model will be enriched by some semantic content.

But what can we do while waiting for those systems to become a reality? We must understand that a structured approach to data modeling is essential, even for the ad hoc, transient world of the information center. Data in a normalized form are, quite simply, solid representations of basic business data dependencies. While *normalized* *databases* have additional *benefits* for maintenace, and hence integrity, the value of a normalized table can be presented in simple business terms: "When you say 'item-number,' Mr. Manufacturing-Manager, this is what you mean."

It is also important that everybody who uses that data element understands what Mr. Manufacturing-Manager means. Element identification therefore becomes as critical a part of the "good information" campaign as the design itself. Are the cash-on-hand, cahs-accum, and cash-balance database elements the same thing? If not, how do they differ? Does it matter which one the end user selects today? User management should be concerned about the correct identification of data, and data administrators should be very conservative about the creation of new data elements. Once data start to proliferate and be duplicated, then redundancy occurs. While database management systems were expected to simplify and resolve some proliferation problems, the desire for access without due regard for quality has caused the value of the original benefits to be forgotten.

Once data are processed, yet more dire events can occur. Even in the best regulated MIS departments, a rigorous conversion of business rules into machine instructions can hardly be called the norm. The systems development life cycle is a defective approach to the implementation of dp systems, but it happens to be the only known way to address the task. Until some of the more disciplied, mechanized ways of capturing business processes mature and are adopted by the community, we will still rely on the communication skills of systems analysts, who may not understand the business well, and users, who may not understand the technical implications of different data and process designs any better.

In addition, of course, current methods for converting designs into program logic are also notoriously unscientific. What is the state of the art? To begin with, we still rely heavily on detailed verbal specifications. The problem with English for making specifications is that it is imprecise. As for better disciplines, dp shops may endorse structured techniques, for example, but survyes show that more often than not homage only is paid to them. No amount of quality control or systems assurance performed after the implementation can guarantee the fitness of a suite of programs for a particular purpose. The prime test is for fragility--did it break?

A SERIES OF REAL CASES

Bad processes are bad in themselves and cause more bad data. Here follows a series of real cases, of differing degrees of seriousness, but all unforgivable in their own ways.

* James Martin notes the celebrated case of the Mariner I spaceship sent to Venus that disappeared into the depths of space because a programmer had used an undeclared variable.

* A motorist in Alaska spent a night in jail because an improperly programmed computer took into account traffic violations that should have been erased.

* At least 12,000 invalid or inaccurate reports on suspects wanted for arrest are transmitted each day to law-enforcement agencies, primarily because of the poor quality of the information maintained in federal computer systems.

* In Massachusetts, welfare recipients were mistakenly thrown off the rolls without a hearing because the state checked bank deposits that were

inaccurate.

* In what might be the most amusing, and in this case least serious, recent incident, an attempt to bounce a laser beam off the space shuttle Discovery failed because ground controllers sent instructions to the shuttle in nautical miles instead of feet.

Not all mistakes are as dramatic, but then these are the cases one hears about. There must be many billions of lines of code being executed correctly out there every day, but that does not mean that we should be less concerned about quality.

In the new world of the pc and the spreadsheet, we now have a new dimension to contend with. Previously we thought in terms of data and processes; now we have to think in terms of models as well. Predefined models, which include some implied relationships about data elements, can be an enormous boon to productivity, but they can also constitute a great danger. Their modus operandi encourages a design-as-you-go approach: changes made to the base model may not be adequately documented, and the implications of such changes may not be perfectly understood by the model's owner. Startling stories are beginning to come in of executives fired because of rash decisions made on the basis of different data/process models of questionable integrity and unverifiable accuracy.

Computers cannot help as much (yet) at the macro level of corporate decision-making. A study of the role of hunches, guesswork, experience, and logic that goes into major strategic decisions is worthy of a book in its own right. A few examples are worth noting here. Outside the world of data processing: Admiral Stansfield Turner, in his book Secrecy and Democracy: The CIA in Transition (Houghton Mifflin, Boston, 1985), points out that most of the real "intelligence failures" in recent United States history have been an interpretation and analysis rather than in information gathering. The misinterpretation of the events preceding the fall of the Shah of Iran is one of his better examples.

Might a similar syndrome have affected IBM itself before the belated decision to cease production of the PCjr home computer? Asked by the New York Times how IBM, masterful as it is at marketing, could so misjudge its audience, C. Michael Armstrong, an IBM senior vice president, said, "Maybe we didn't understand the data we were seeing. That can happen when you are new to a business. And perhaps the home computer market was so euphoric in 1983 that we were just swept up in it."

The data were presumably right, but the judgment wrong. Coca-Cola, another major firm in the limelight recently, also performed massive market research before withdrawing its original soda pop formula (a good example of data that uniquely identifies a company), but ignored weighty cultural and emotional factors that eventually won through, forcing the company to reinstate a version of the soft drink.

So, if our tool set cannot prevent the judgment failures, what can dp professionals do with production and decision support systems to ensure that data quality is maintained? What message can they take to their thirsty information center users? I can suggest a number of actions.

1. The heavy and gray hand of control must be used gently. Expectations have grown too far for the gifts to be taken away. The MIS department does not have that spotless reputation that will encourage users to heed the new message of information resource management. Many of them will have to learn the hard way, through their mistakes, as the MIS department has done.

2. Systems implementers must believe in quality, deliver quality, and become missionaries for quality. Provably correct code may not be here yet, but implementers should avail themselves of structured approaches to data and system design. Fourth generation languages are accepted as a valuable boon to address the applications backlog, but to the criteria of performance and user-friendliness should be added the dimension of rigor. Data integrity, as far as resource contention and recovery mechanisms are concerned, must be an explicit part of the design process.

3. Real-life, practical examples of useful entity analysis should be explained in information center training programs. The gray jargon of theory should be replaced by the green tree of life (to paraphrase Goethe).

Normalization can be fun. Methodological approaches have very business-oriented applications, and users can be led to understand how the user-friendly tables of data they view represent everyday business facts. Encourage them to consider the issues of data dependence from a business-oriented standpoint.

4. The information center must be simplified. In response to a swell of user needs and demands, all to often a surfeit of information management solutions is installed. This adds complexity to the existing heterogeneity in the conventional mainframe production environment. Certainly in the IBM world, a combination of strategic, technological, and marketing influences has caused data formats to multiply and data to be duplicated. With current database technology, there is no reason why a single database manager, with single dictionary control, cannot handle both the high-volume production needs of an installation as well as its ad hoc information center needs. And that means that the number of tools and products to install and maintain is reduced, too.

5. Avoid data redundancy if possible. As data get duplicated, they start to go bad. Yes, there are valid business as well as technological reasons why you need mirror versions of databases. It can be for security purposes, reasons of times-series or multidimensional modeling, or performance. But understand why you are doing it. And a single database management system umbrella will make life very much simpler.

6. Learn from experiences when things go wrong. Users will often realize that a graph or chart is inherently off the wall, and the assumptions on which the model was made should immediately be investigated. Evaluate why confusion over similar-sounding data elements has arisen, and take the time to trace the history and use of such data. Reflect the outcome of such issues in your documentation and training systems: you will be polishing that corporate asset. A data administrator that succeeds in reducing the number of data elements in his company's dictionary is probably doing it a favor. Train the users in data as much as product: it may be theirs generacally, but individually they may never have asked the right questions.

7. Understand and communicate what end-user programming means. Data processing personnel may not have effectively sold the added value they brought to system implementation over the years, but the principles of documentation, backup, maintenance, and audibility do have a role. Simple applications tend to become complex. Personnel switch departments. Departmental managers indulging in end-user computing will have to take responsibility for those systems. Logical thinking is needed in their design and development as much as business savvy. Even the simplest query may require an understanding of Boolean ANDs and ORs.

8. Learn to live with pcs. The glitter is too attractive. They can perform very useful work. You cannot hope to control the information being used on them, but you can reduce the chance of bad data being entered on them. When you simplify your mainframe data environment, find a good pipeline that feeds directly into the spreadsheet world under dictionary control. Treat data entry to the mainframe in the same rigorous way you did before the desktop machine ever came along.

9. Use the computer to help you as much as possible. Investigate computerbased training packages that can help you tailor the business and data education for your users at the individual paces they need. Take advantage of your investment in mechanized dictionary systems to make information about data available to those who need it. Let the system make decisions about those queries that may be so resource consumptive that they need to be routed to batch. Use the accounting capabilities of the database management system or see who is abusing as well as underusing the system. Use the statistics on access usage to tune the system or make popular requests more efficient. Better management of the information resource will lead to more confident and effective use of it.

10. Ask of any system prototype, does it fly?

DESCRIPTORS: Data base management--Planning; Electronic data processing--

Quality control; Information storage and retrieval systems--Services;
Data base industry--Standards
SIC CODES: 7374 Data processing and preparation; 7375 Information
retrieval services
FILE SEGMENT: MI File 47
?

3/9/13 (Item 2 from file: 202)
DIALOG(R)File 202:Info. Sci. & Tech. Abs.

1804307
Interactive automated system for normalization of relations.
Author(s): Travis, C T
Corporate Source: School Of Engineering, Air Force Inst. Of Tech., Wright-patterson Afb, Oh
(115 pages)
Publication Date: Mar. 18, 1983
Language: English
Document Type: Book
Record Type: Abstract
Journal Announcement: 1800

An interactive automated system for normalizing relations was designed and partially implemented with the goal of interacting it with a relational database management system. In addition, this system was to serve as pedagogical tool for teaching the *benefits* of *normalization* for relational *database* management. Toward these goals, an extensive literature search and analysis of the six normal forms and other pertinent areas of relation normalization was required in order to identify current issues and areas of research. A main concern was overcome by attempting to locate an algorithm to normalize relations.

Classification Codes and Description: 6.09 (Management Information Systems and Decision Support); 5.06 (Software and Programming)
Main Heading: Information Systems and Applications; Information Processing and Control
?

3/9/4 (Item 1 from file: 6)
DIALOG(R)File 6:NTIS

1035823 NTIS Accession Number: AD-A127 496/8
Interactive Automated System for Normalization of Relations
(Master's thesis)
Travis, C. T.
Air Force Inst. of Tech., Wright-Patterson AFB, OH. School of Engineering.
Corp. Source Codes: 000805002; 012225
Report No.: AFIT/GCS/EE/83M-4
18 Mar 83 115p
Languages: English Document Type: Thesis
Journal Announcement: GRAI8317
Order this product from NTIS by: phone at 1-800-553-NTIS (U.S. customers); (703)605-6000 (other countries); fax at (703)321-8547; and email at orders@ntis.fedworld.gov. NTIS is located at 5285 Port Royal Road, Springfield, VA, 22161, USA.
NTIS Prices: PC A06/MF A01
Country of Publication: United States

An interactive Automated System for Normalizing Relations was designed and partially implemented with the goal of interacting it with a Relational Database Management System. In addition, this system was to serve as pedagogical tool for teaching the *benefits* of *normalization* for relational *database* management. Toward these goals, an extensive literature search and analysis of the six normal forms and other pertinent areas of relation normalization was required in order to identify current issues and areas of research. A main concern was overcome by attempting to locate an algorithm to normalize relations. Most authors present a cursory guide to normalization if any at all, but Jeffrey Ullman presents the concept of minimal set. If a minimal set is deduced from an unnormalized relation the resultant relations that are formed are in Third Normal Form. Research was also accomplished in the area of user friendly interactive methods. This was needed because the requirement existed for this system to query the user for functional dependencies in order that relations could later be normalized. (Author)

Descriptors: *Systems engineering; *Data bases; *Data management; Algorithms; Interactions; User needs; Requirements; Configurations; Automatic; Interrogation; Theses
Identifiers: Relational data bases; Data base management systems; TDSP(Top Down Structured Programming); NTISDODXA
Section Headings: 88B (Library and Information Sciences--Information Systems)
?

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System Requirements

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Server
Workstation

eThink Desktop

eThink® systems support and enhance the acclaimed Kepner-Tregoe processes for Problem Solving and Decision Making – long considered the gold standard througho world.

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eThink Enterprise—our collaborative solution—is a client-server application designed to support the integration of Kepner-Tregoe processes into an organization to improve its operations. The eThink Enterprise application focuses on:

- Enabling groups to generate ideas and collect data about an issue
- Integrating the use of the Kepner-Tregoe rational processes into work routines
- Coordinating and monitoring activities while working though an issue
- Increasing the access to and use of structured knowledge by members of your organization faced with the same or similar issues to resolve

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The eThink interface is currently only available in English.

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System Requirements

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Search Results for Jan 01, 1996 - Aug 05, 2003

1996	1997	1998	1999	2000	2001	2002	2003
0 pages	8 pages	4 pages	6 pages	11 pages	14 pages	9 pages	0 pages
	Apr 12, 1997 *	Jan 30, 1998 *	Jan 25, 1999	Mar 01, 2000 *	Jan 18, 2001 *	Jan 22, 2002 *	
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	Apr 12, 1997 *	Dec 06, 1998	Feb 20, 1999	Mar 04, 2000	Feb 02, 2001	May 26, 2002 *	
	Apr 12, 1997 *	Dec 12, 1998	Feb 21, 1999	May 11, 2000 *	Mar 02, 2001 *	May 28, 2002	
	Apr 12, 1997 *		Apr 20, 1999 *	May 19, 2000 *	Apr 10, 2001 *	May 30, 2002	
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	Apr 15, 1997 *			Jun 21, 2000	Apr 18, 2001	Jun 02, 2002 *	
	Jul 09, 1997 *			Aug 16, 2000 *	May 16, 2001 *	Jun 03, 2002 *	
				Aug 23, 2000	Jun 17, 2001 *	Jun 04, 2002	
				Oct 18, 2000 *	Jul 21, 2001 *		
				Nov 09, 2000 *	Aug 06, 2001 *		
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Results Page 1 of '1' : 1

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E487

L Number	Hits	Search Text	DB	Time stamp
1	0	(benefit or benefits) NEAR5 (normaliz$3) NEAR2 database$1	USPAT; US-PGPUB; EPO; JPO; DERWENT; IBM_TDB	2003/08/05 17:07

SMD

Dialog
3/11/03

```
Your SELECT statement is:
   s problem()solving(2n)decision()making and py<=1998 and (kepner()tregoe
or RMC or renewal()management()centre)

           Items   File
           -----   ----
               1     2: INSPEC_1969-2003/Mar W1
               1     8: Ei Compendex(R)_1970-2003/Mar W1
               1    11: PsycINFO(R)_1887-2003/Mar W2
               7    13: BAMP_2003/Jan W4
              30    15: ABI/Inform(R)_1971-2003/Mar 08
               2    16: Gale Group PROMT(R)_1990-2003/Mar 10
               3    20: Dialog Global Reporter_1997-2003/Mar 11
               7    47: Gale Group Magazine DB(TM)_1959-2003/Mar 07
               8    75: TGG Management Contents(R)_86-2003/Mar W1
       Examined  50 files
               3    88: Gale Group Business A.R.T.S._1976-2003/Mar 10
               2    95: TEME-Technology & Management_1989-2003/Feb W4
               1   112: UBM Industry News_1998-2003/Mar 11
               2   122: Harvard Business Review_1971-2003/Feb
       Examined 100 files
              19   148: Gale Group Trade & Industry DB_1976-2003/Mar 07
               3   194: FBODaily_1982/Dec-2003/Nov
       Examined 150 files
               1   233: Internet & Personal Comp. Abs._1981-2003/Feb
               1   240: PAPERCHEM_1967-2003/Mar W2
               1   248: PIRA_1975-2003/Mar W1
               3   249: PIRA Mgt. & Mktg. Abs._1976-2003Mar W5
               2   275: Gale Group Computer DB(TM)_1983-2003/Mar 10
       Examined 200 files
               1   323: RAPRA Rubber & Plastics_1972-2003/Mar
       Examined 250 files
       Examined 300 files
               5   484: Periodical Abs Plustext_1986-2003/Mar W1
               1   485: Accounting & Tax DB_1971-2003/Mar W1
       Examined 350 files
               6   553: Wilson Bus. Abs. FullText_1982-2003/Jan
       Examined 400 files
               5   619: Asia Intelligence Wire_1995-2003/Mar 10
               1   624: McGraw-Hill Publications_1985-2003/Mar 11
               1   635: Business Dateline(R)_1985-2003/Mar 08
               1   648: TV and Radio Transcripts_1997-2003/Mar W2
       Examined 450 files
               3   728: Asia/Pac News_1994-2003/Mar W2
       Examined 500 files
               1   813: PR Newswire_1987-1999/Apr 30

   30 files have one or more items; file list includes 548 files.
   One or more terms were invalid in 99 files.
```

JMD

Set	Items	Description
S1	123	PROBLEM()SOLVING(2N)DECISION()MAKING AND PY<=1998 AND (KEPNER()TREGOE OR RMC OR RENEWAL()MANAGEMENT()CENTRE)
S2	86	RD (unique items)
S3	21	S2 AND SOFTWARE
S4	14	S3 AND PY<=1996
S5	17	S3 AND PY<=1997
S6	3	S5 NOT S4

reviewed all, KWIC

File 2:INSPEC 1969-2003/Mar W1
(c) 2003 Institution of Electrical Engineers
File 8:Ei Compendex(R) 1970-2003/Mar W1
(c) 2003 Elsevier Eng. Info. Inc.
File 11:PsycINFO(R) 1887-2003/Mar W2
(c) 2003 Amer. Psychological Assn.
File 13:BAMP 2003/Jan W4
(c) 2003 Resp. DB Svcs.
File 15:ABI/Inform(R) 1971-2003/Mar 08
(c) 2003 ProQuest Info&Learning
File 16:Gale Group PROMT(R) 1990-2003/Mar 10
(c) 2003 The Gale Group
File 20:Dialog Global Reporter 1997-2003/Mar 11
(c) 2003 The Dialog Corp.
File 47:Gale Group Magazine DB(TM) 1959-2003/Mar 07
(c) 2003 The Gale group
File 75:TGG Management Contents(R) 86-2003/Mar W1
(c) 2003 The Gale Group
File 88:Gale Group Business A.R.T.S. 1976-2003/Mar 10
(c) 2003 The Gale Group
File 95:TEME-Technology & Management 1989-2003/Feb W4
(c) 2003 FIZ TECHNIK
File 112:UBM Industry News 1998-2003/Mar 11
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File 122:Harvard Business Review 1971-2003/Feb
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File 148:Gale Group Trade & Industry DB 1976-2003/Mar 07
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File 248:PIRA 1975-2003/Mar W1
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File 249:PIRA Mgt. & Mktg. Abs. 1976-2003Mar W5
(c) 2003 Pira International
File 275:Gale Group Computer DB(TM) 1983-2003/Mar 10
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File 323:RAPRA Rubber & Plastics 1972-2003/Mar
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File 484:Periodical Abs Plustext 1986-2003/Mar W1
(c) 2003 ProQuest
File 485:Accounting & Tax DB 1971-2003/Mar W1
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File 553:Wilson Bus. Abs. FullText 1982-2003/Jan
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File 619:Asia Intelligence Wire 1995-2003/Mar 10
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File 635:Business Dateline(R) 1985-2003/Mar 08
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File 648:TV and Radio Transcripts 1997-2003/Mar W2
(c) 2003 FDCH Inc.

```
File 728:Asia/Pac News 1994-2003/Mar W2
         (c) 2003 Dialog Corporation
File 813:PR Newswire 1987-1999/Apr 30
         (c) 1999 PR Newswire Association Inc
```

```
Your SELECT statement is:
   s kepner()tregoe and decision()aid and py<=1997

           Items   File
           -----   ----
               1     15: ABI/Inform(R)_1971-2003/Mar 08
               1     75: TGG Management Contents(R)_86-2003/Mar W1
       Examined  50 files
       Examined 100 files
               3    148: Gale Group Trade & Industry DB_1976-2003/Mar 07
       Examined 150 files
               1    275: Gale Group Computer DB(TM)_1983-2003/Mar 10
       Examined 200 files
       Examined 250 files
       Examined 300 files
       Examined 350 files
       Examined 400 files
       Examined 450 files
       Examined 500 files

   4 files have one or more items; file list includes 548 files.
   One or more terms were invalid in 99 files.
```

```
Set      Items   Description
S1           6   KEPNER()TREGOE AND DECISION()AID AND PY<=1997
S2           3   RD (unique items) —reviewed all kwic
? show files
File  15:ABI/Inform(R) 1971-2003/Mar 08
         (c) 2003 ProQuest Info&Learning
File  75:TGG Management Contents(R) 86-2003/Mar W1
         (c) 2003 The Gale Group
File 148:Gale Group Trade & Industry DB 1976-2003/Mar 07
         (c)2003 The Gale Group
File 275:Gale Group Computer DB(TM) 1983-2003/Mar 10
         (c) 2003 The Gale Group
?
```

```
Your SELECT statement is:
   s Decision()Aid()II

          Items   File
          -----   ----
      Examined  50 files
      Examined 100 files
              1   144: Pascal_1973-2003/Mar W1
              1   148: Gale Group Trade & Industry DB_1976-2003/Mar 07
      Examined 150 files
              1   275: Gale Group Computer DB(TM)_1983-2003/Mar 10
      Examined 200 files
      Examined 250 files
      Examined 300 files
      Examined 350 files
      Examined 400 files
      Examined 450 files
      Examined 500 files

   3 files have one or more items; file list includes 548 files.
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reviewed all, kwic

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6	SQL and normalized AND PDN(<07/02/1997)	View 7 results	Add to Search
5	(Kepner-Tregoe or (Kepner pre/1 Tregoe)) and (knowledgebase? or (knowledge pre/1 base?)) AND PDN(<07/02/1997)	View 9 results	Add to Search
4	(Kepner-Tregoe or (Kepner pre/1 Tregoe)) and (knowledgebase? or (knowledge pre/1 base?))	View 11 results	Add to Search
3	(Kepner-Tregoe or (Kepner pre/1 Tregoe)) and knowledge and (database? or table?) AND normalized	View 1 results	Add to Search
2	(Kepner-Tregoe or (Kepner pre/1 Tregoe)) and knowledge and (database? or table?)	View 11 results	Add to Search
1	(Kepner-Tregoe or (Kepner pre/1 Tregoe)) and knowledge	View 11 results	Add to Search

reviewed all, KwC

Enter a word, words or specific phrase.

SQL and normalized AND PDN(<07/02/ [Search]

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Publication type: All

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- [ ] Show articles from peer reviewed publications only
- [ ] Show total number of articles